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Acute Coronary Syndromes

COMBINATION OF ABSOLUTE AND RELATIVE CHANGES IN CARDIAC TROPONIN CONCENTRATIONS IN THE EARLY DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION

Poster Contributions
Poster Sessions, Expo North
Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Cardiac Biomarkers and Cardiovascular Risk
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1303-195

Authors: *Affan Irfan, Tobias Reichlin, Raphael Twerenbold, Karin Wildi, Christian Mueller, University Hospital Basel, Basel, Switzerland*

Background: Absolute changes ([[Unable to Display Character: ∆]]) in high-sensitivity cardiac troponin T (hs-cTnT) seem to have higher diagnostic accuracy in the early diagnosis of acute myocardial infarction (AMI) as compared to relative changes ([[Unable to Display Character: ∆]]%). It is unknown whether the same applies to hs-cTnI assays and whether the combination of [[Unable to Display Character: ∆]] and [[Unable to Display Character: ∆]]% change might further increase accuracy.

Methods: In a prospective, international multicenter study, hs-cTn was measured with three novel assays (hs-cTnT, Roche Diagnostics; hs-cTnI, Beckman-Coulter; hs-cTnI Siemens) in a blinded fashion at presentation and after 1 and 2 hours in a blinded fashion in 830 unselected patients with suspected AMI. The final diagnosis was adjudicated by two independent cardiologists.

Results: The area under the receiver operating characteristic curve (AUC) for diagnosing AMI was significantly higher for 1 and 2 hour [[Unable to Display Character: ∆]] versus [[Unable to Display Character: ∆]]% hs-cTn changes for all three assays ($p<0.001$). The AUC of the combination of 2 hour [[Unable to Display Character: ∆]] and [[Unable to Display Character: ∆]]% change (hs-cTnT 0.98 [95% CI, 0.97-0.99]; hs-cTnI Beckman-Coulter 0.97 [0.96-0.99]; hs-cTnI Siemens 0.96 [0.93-0.99]) were very high and provided some benefit as compared to the use of [[Unable to Display Character: ∆]] change alone for hs-cTnT, but not for the hs-cTnI assays. Reclassification analysis confirmed the superiority of [[Unable to Display Character: ∆]] changes versus [[Unable to Display Character: ∆]]% changes.

Conclusion: Absolute changes seem to be the preferred metrics for both hs-cTnT and hs-cTnI in the early diagnosis of AMI. The combination of absolute and relative changes provides a small added value for hs.-cTnT, but not for hs-cTnI.